media for design development

forms and processes for resilience

- Develop fruitful physical-digital design approaches to explore, analyze, refine and present ideas
- Understand intuitive and data-driven approaches
- Use Nature as inspiration
- See emergent possibilities in digital design, analysis and fabrication

In times of uncertainty, form needs to adapt to changing conditions. As the climate emergency accelerates, designing for site conditions such as micro-climate and resource availability becomes more critical. Designers need to control geometry so that buildings and spaces can work with natural systems, inhabitant needs, urban infrastructure, and cultural preferences. With parametric design, articulating an idea in geometric or mathematical relationships pushes a designer to understand its core essence and reveals a spectrum of possibilities appropriate for different situations.

Explore how design computing can increase perceptions, enrich design options, and improve design decision-making. This course develops skills for generating beautiful design variations, and evaluating the results with aesthetic judgement and simulation tools. Students will use Nature’s growth, evolution and motion for Inspiration and study how designers use computers to pursue biomimicry. Using craft and computation together, students will extend material experiments by using parametric and genetic approaches to discover new possibilities. To understand how Grasshopper analysis plug-ins reveal how form affects performance, students design solar-responsive shading structures. They develop confidence by copying and modifying design examples, using a library of video tutorials.

The class coaches students on using Rhinoceros’ Grasshopper platform, which opens up a spectrum of free and low-cost plug-in design applications that span in scale from jewelry to aerospace, and realms including lighting, structure, water run-off, energy, acoustics, etc.

No prior knowledge of Rhino Grasshopper is needed. Students must to have access to Rhinoceros software running on Windows. The interactive class includes hands-on practice, discussions and one-on-one support.